

IGA Monitoring Report

Tempe Aviation Commission

Month:

February 2005

Prepared by:

City of Tempe for the Tempe Aviation Commission (TAVCO)
City of Tempe, 31 East 5th Street, Tempe AZ 85280

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1. Introduction

This report is assembled for the Tempe Aviation Commission (TAVCO) to monitor the monthly compliance of operations at Phoenix Sky Harbor International Airport with certain noise mitigation flight procedures over the City of Tempe. TAVCO consists of Tempe residents appointed by the Tempe Mayor with approval of the City Council to assist and advice on aviation noise and other aviation issues. The City of Tempe is located directly east of the Phoenix Sky Harbor International Airport in Phoenix, which has 3 parallel runways, Runway 8/26, Runway 7L/25R and Runway 7R/25L.

In 1994 the City of Phoenix and the City of Tempe agreed to continue noise mitigation flight procedures already in use over Tempe and to introduce a new procedure for aircraft arriving over Tempe to land on the new third runway (7R/25L) at Phoenix Sky Harbor International Airport from the east. Tempe had prior to the agreement challenged the plans for the construction of a third runway because of inadequate assessment of the environmental impacts.

a) The 4-DME procedure

The 1993 Environmental Impact Statement (EIS)

According to the 1993 EIS, which among other planned improvements included the construction of a third runway, departures to the east from the new runway would follow the so-called "One-DME" Standard Instrument Departure procedure (SID) similar to the SID already in use by aircraft departing to the east from the airport¹.

The 1994 Record of Decision

The continued use of the "One-DME" procedure was also stated in the Record of Decision (ROD) for the final where the FAA approved the master plan update that included the plans for a third runway. When Phoenix and Tempe signed the Intergovernmental Agreement (IGA) on noise mitigation flight procedures over Tempe, the FAA reaffirmed its commitment to uphold these procedures. The "One-DME procedure" became the "4-DME procedure" when a navigational aid (VORTAC) was moved closer to the airport.

Standard Instrument Departure Procedure (SID)



North Runway 8L (Now 8): "Fly heading 085° to intercept PHX-075, across PXR R-350 at or below 3,000'. At 4 DME east of PHX VORTAC, turn right/left"
Center Runway 8R (Now 7L): "Fly direct PHX VORTAC, cross PHR at or below 3,000'. Proceed via PHX R-075 to 4 DME east, turn right/left" (FAA SW-1 of August 10, 2000)

Measure for Departure Procedure Compliance

Based on the 4-DME Standard Instrument Departure procedure (SID) TAVCO proposed a corridor over the river bed of the Salt River to measure how jet aircraft and large turboprop aircraft² complied with the "4-DME procedure" using the Noise and Flight Track Monitoring System that the airport had agreed to install. This proposal was adopted by the Tempe City Council, but was rejected by the City of Phoenix. The airport use a vertical line to measure compliance of jet

¹ Source: Final Environmental Impact Statement Phoenix Sky Harbor International Airport Master Plan Update Improvements, November 1993, Section 5.

² Aircraft certified and operated according to Title 14 FAR Part 121 or 135 with gross weight exceeding 12,500 pounds.

departures called the "4-DME Gate" or the "Exit Window Only Gate", which is a 5,500 feet long imaginary line running north south at 4-DME or approximately at Price Road. Turns by carrier jets north or south away from the Salt riverbed before reaching this line, or failures to stay inside the north or south end of this line are registered and in a compiled format submitted to the airlines in a "Notice of Deviation" letter from the airport administration. Deviations influenced by local weather conditions are excluded from the notification procedure.

This report compares departure compliance using the Tempe Corridor and the Phoenix "4-DME Gate" or "Exit Window Only Gate", and for the Tempe Corridor measure includes large turboprop aircraft because they are part of the 1994 agreement. Since the implementation of the "4-DME Gate" deviation standard for large carriers in 1997, the main issue of concern has been how well these aircraft on departure from Phoenix Sky Harbor International Airport to the east keep to the Salt riverbed and avoid flying over populated areas in Tempe.

b) The "Side Step" procedure

This is a noise mitigating procedure for jets and large turboprop aircraft that approach Phoenix Sky Harbor International Airport from the east to land on the third runway, Runway 25L. Aircraft are directed to approach the center runway, Runway 25R, until they are 3 NM from the runway end or abeam Sun Devil Stadium at Mill Avenue in Tempe. At this point the pilot can be requested by the Phoenix air traffic controllers to change the approach course to land on Runway 25L. When the pilot directs the aircraft from a stabilized approach to the Runway 25R towards the left and line up for landing on Runway 25L, the pilot performs a "side step procedure". This procedure is designed to keep large aircraft approaches over the river bed as long as possible before they close in towards neighborhoods in downtown Tempe south of the riverbed.



On March 27, 2002 the FAA suspended implementation of a charted "side step" procedure because of flight safety concerns. Presently the FAA is clearing jets and large turboprop aircraft for straight-in approaches to Runway 25L from the east. No measure has been set up in the airport Noise and Flight Track Monitoring System to monitor the use of this procedure, and in its present format this report does not include any data on the utilization of the "side step" procedure.

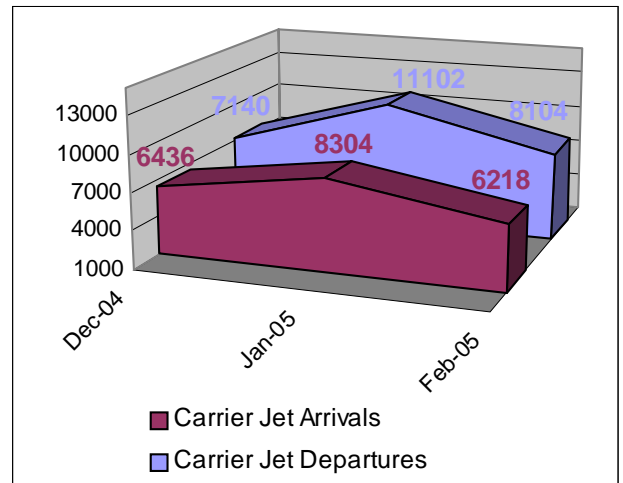
c) Departure Split (Equalization)

This procedure attempts to disperse evenly on an annual basis the noise impact of eastbound and westbound jet and large turboprop aircraft departures between Tempe and Phoenix during day and nighttime hours.

2. Aircraft Operations

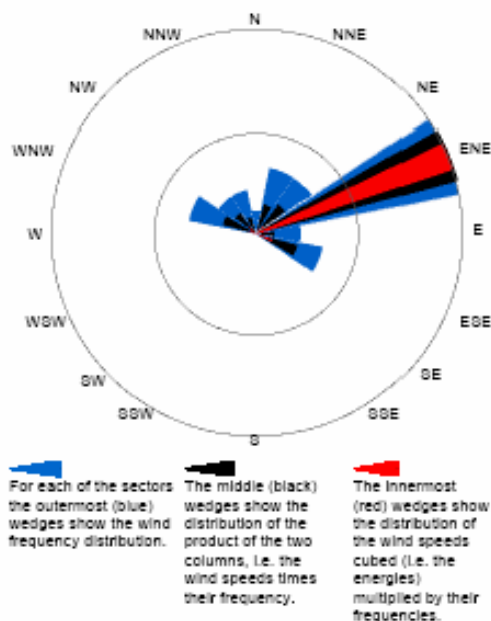
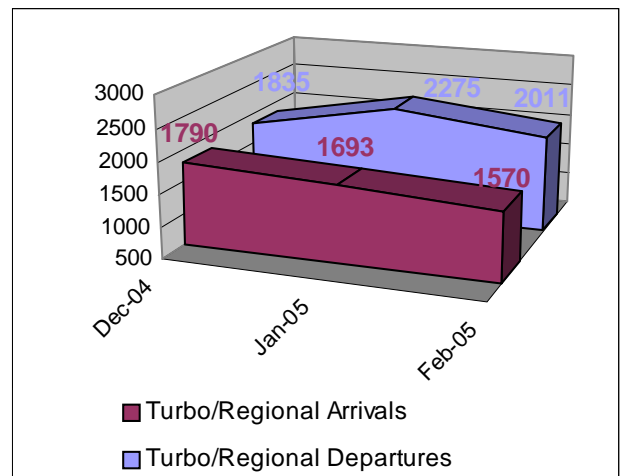
Carrier Aircraft

The number of large carrier jets departing to the east during the month of February 2005 decreased 27.0% compared to January 2005. Carrier arrival operations from the east towards the west decreased 25.1% compared to operations in January 2005.



Regional Jets & Large Turboprop Aircraft

Regional jets and large turboprop departures towards the east decreased by 11.6% in February 2005 compared to January 2005. The number of regional jets and large turboprop aircraft arriving from the east decreased by 7.3% compared to the previous month.

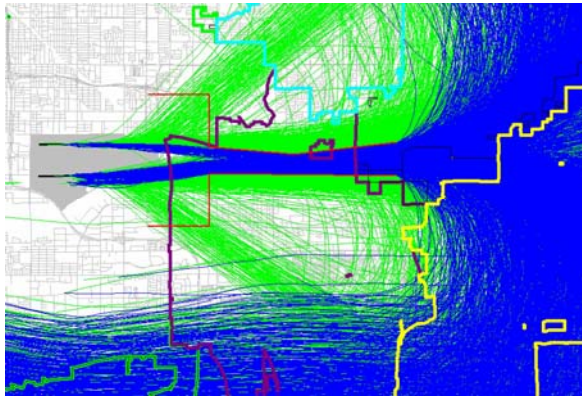


Moderate winds mainly from the east northeast with speeds up to gentle breeze, 9.6 knots, during one morning at 10:00 a.m.

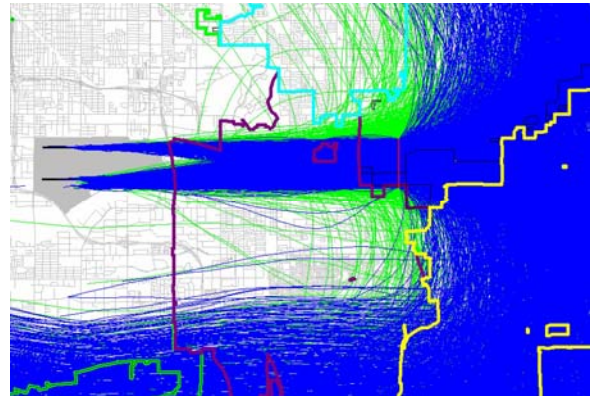
3. Departure Compliance

Compliance Rates

Including the large turboprop aircraft, which routinely are routed on approximate departure angles of 120° towards the southeast and 60° towards the northeast, **60.3%** of all jet and larger turboprop aircraft departures to the east complied with the Tempe Corridor during the month of February 2005. 96.5% of the jets complied with the Phoenix 4 DME gate. Departures by large turboprop aircraft are not included in the Phoenix gate compliance rate.

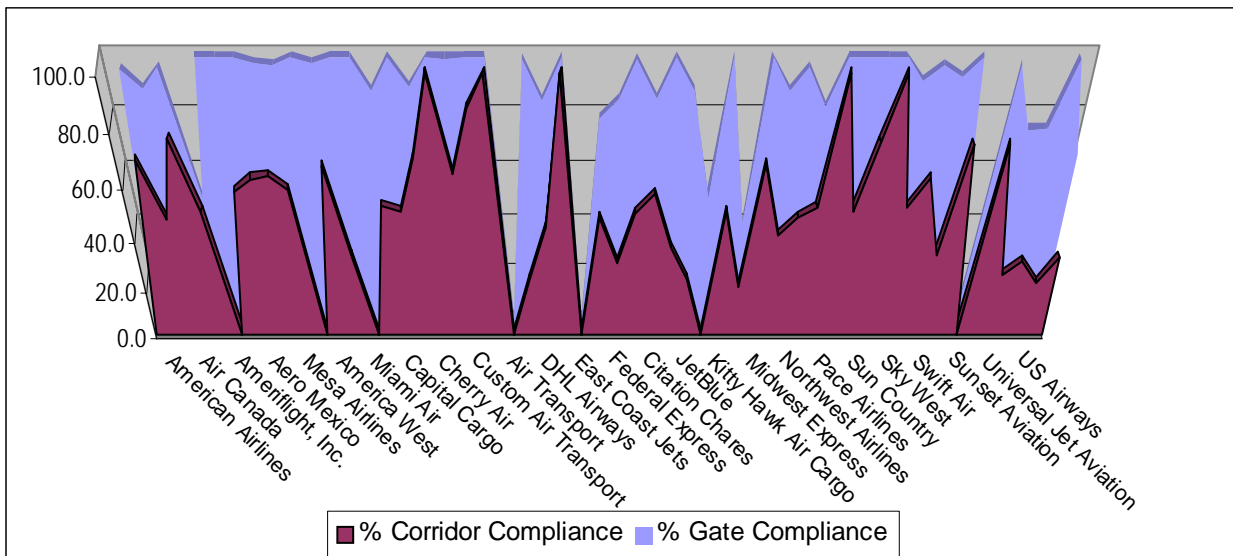


Flight tracks inside the Tempe Corridor are depicted in blue.



Flight tracks inside the Phoenix Gate are depicted in blue.

| Carrier | ICAO Code | % | Carrier | ICAO Code | % | Carrier | ICAO Code | % |
|-----------------------------|-----------|-------|--------------------------|-----------|-------|--------------------------------|-----------|-------|
| American Airlines | AAL | 69.7 | Custom Air Transport | CTT | 87.5 | Northwest Airlines | NWA | 47.8 |
| Airborne Express | ABX | 46.8 | Casino Express | CXP | 100.0 | Flight Options | OPT | 51.4 |
| Air Canada | ACA | 77.4 | Air Transport | CYO | 0.0 | Pace Airlines | PCE | 100.0 |
| Ameristar Jet Charter | AJI | 50.0 | Delta Airlines | DAL | 23.6 | Pacific Jet | PCJ | 50.0 |
| Ameriflight | AMF | 0.0 | DHL Airways | DHL | 44.4 | Sun Country | SCX | 76.0 |
| American Trans Air | AMT | 57.6 | US Department of Justice | DOJ | 100.0 | Spirit Aviation | SJJ | 100.0 |
| Aero Mexico | AMX | 62.5 | East Coast Jets | ECJ | 0.0 | Sky West | SKW | 51.7 |
| Alaska Airlines | ASA | 63.3 | Executive Jet Aviation | EJA | 48.1 | Southwest Airlines | SWA | 62.9 |
| Mesa Airlines | ASH | 58.4 | Federal Express | FDX | 30.2 | Swift Air | SWQ | 33.3 |
| Air Transport International | ATN | 0.0 | Frontier Airlines | FFT | 49.5 | TAG Aviation | TAG | 75.0 |
| America West | AWE | 67.1 | Citation Chares | FIV | 57.1 | Sunset Aviation | TWY | 0.0 |
| British Airways | BAW | 33.3 | Hawaiian Airlines | HAL | 36.4 | United Airlines | UAL | 75.1 |
| Miami Air | BSK | 0.0 | JetBlue | JBU | 23.5 | Universal Jet Aviation | UEJ | 25.0 |
| Atlantic Southeast | CAA | 52.3 | Kaiser Air | KAI | 0.0 | United Parcel Service | UPS | 30.4 |
| Capital Cargo | CCI | 50.0 | Kitty Hawk Air Cargo | KHA | 50.0 | US Airways | USA | 22.0 |
| Champion Air | CCP | 70.0 | Flexjet | LXJ | 20.0 | US Check Airlines | USC | 32.1 |
| Cherry Air | CCY | 100.0 | Midwest Express | MEP | 67.7 | Corporate Flight International | VHT | 0.0 |
| Continental | COA | 64.7 | GA | N | 41.0 | Westjet | WJA | 71.4 |

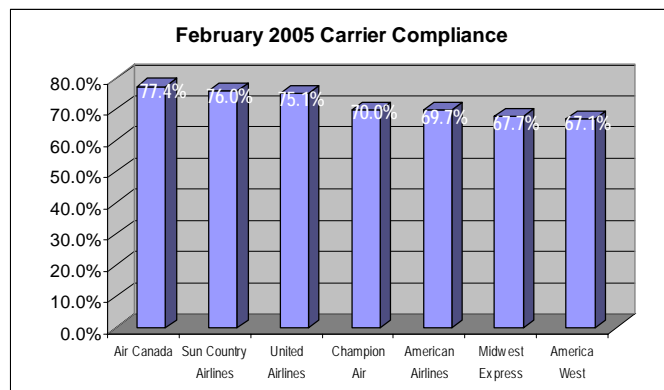


Departures excluded³:

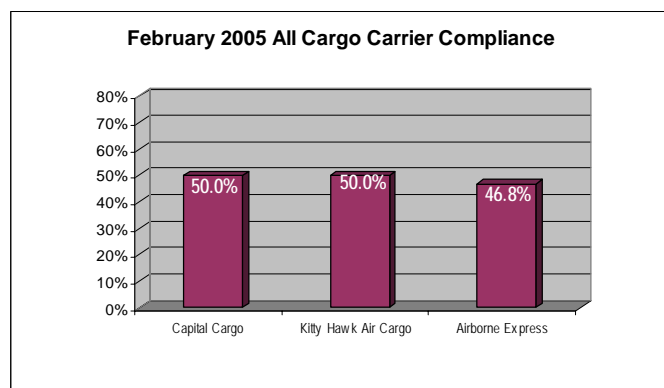
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|--------------------------|-------------------------------|----------------------------|
| 2/1/2005 7:48-8:53 p.m. | 2/10/2005 7:02-7:58 p.m. | 2/21/2005 10:00-12:00 a.m. |
| 2/2/2005 7:26-11:07 p.m. | 2/11/2005 7:03 a.m.-8:52 p.m. | 2/21/2005 1:58-3:13 p.m. |
| 2/4/2005 8:32-8:39 p.m. | 2/11/2005 10:01-10:47 p.m. | 2/27/2005 10:23-11:01 p.m. |
| 2/7/2005 7:13-7:58 a.m. | 2/17/2005 2:04-3:40 p.m. | |
| 2/9/2005 7:52-8:33 p.m. | 2/21/2005 7:00-8:36 a.m. | |

Top Airlines

Among the carriers with over 10 departures to the east during the month of February 2005, 4 had 70% or more of their aircraft stay within the Tempe Corridor. In January 2005, 3 carriers had 70% or more of their aircraft in compliance with the Tempe corridor.



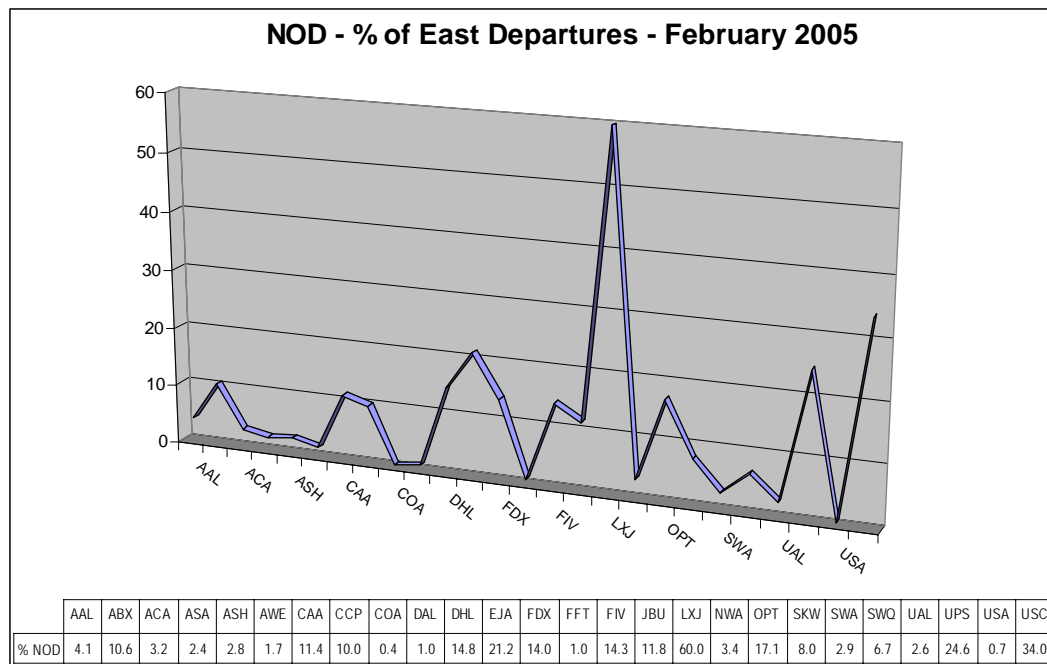
The compliance rates for the top cargo carriers with more than 10 departures to the east during the month of February 2005 were low, but more even compared to last month when the top 3 all cargo carriers had between 35% and 58% of their aircraft in compliance with the Tempe Corridor.



³ Based on City of Phoenix evaluations of weather influencing navigation east to 4DME.

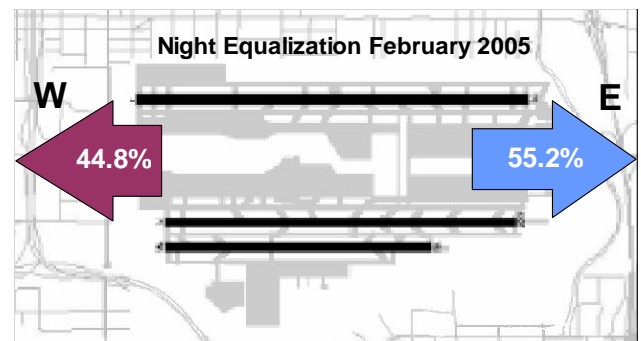
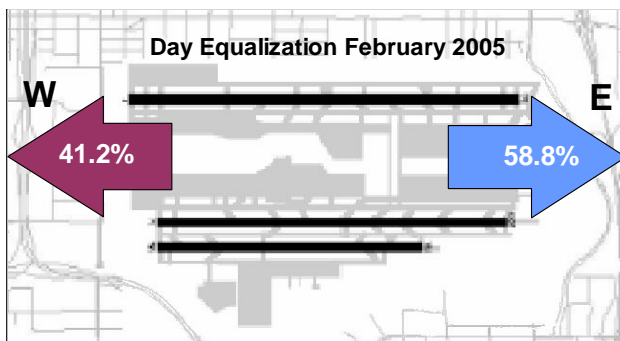
Notice of Deviation

The City of Phoenix issues Notice of Deviation (NOD) to airlines and operators of smaller jet aircraft if any of their jets fails to comply with the 4DME Gate. Among the operators of jets with at least 5 departures to the east during the month of February 2005, Flexjet and UPS received the most notices relative to the number of east departures registered for each operator.



4. East/West Departure Split

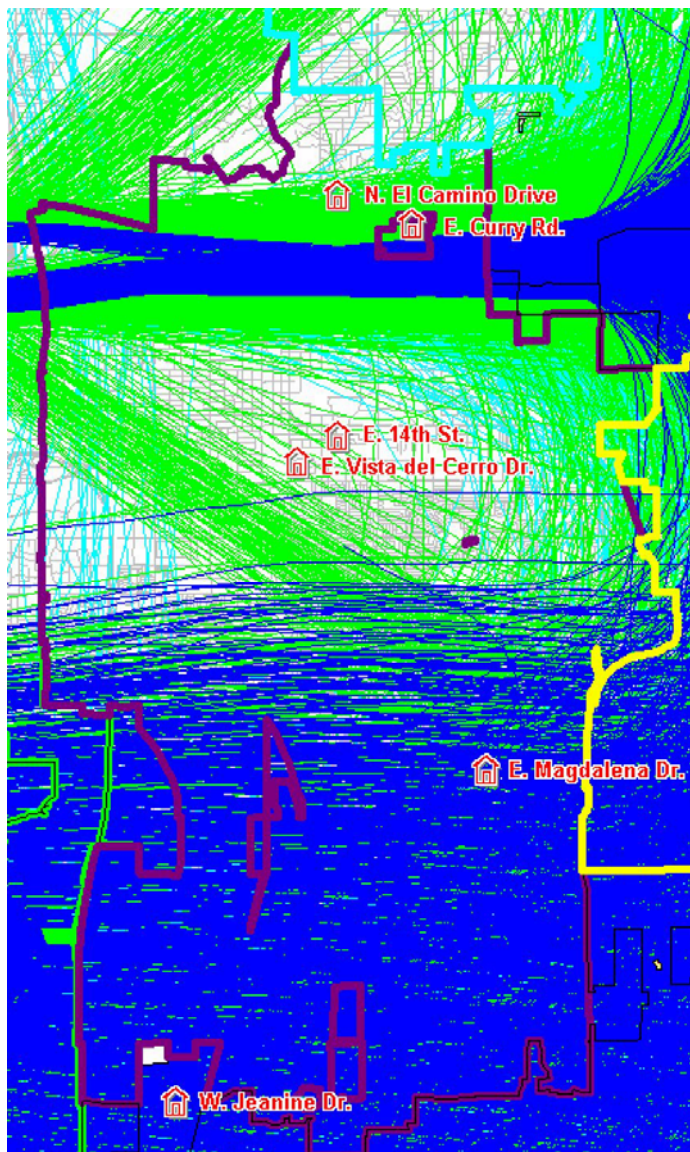
The split in jet and large commuter aircraft departures to the east and west of the Phoenix Sky Harbor International Airport is generally not as favorable for Tempe during the nighttime hours compared to daytime hours. As for last month both day and night operations were unfavorable to Tempe residents during February 2005. 55.2% went east during nighttime and 58.8% went east during daytime.



Day and nighttime departures are generated by a query covering day + evening hours and nighttime hours. Day = 7: 00 a.m. to 9:59:59 p.m. local time and Night = 9:59:59 p.m. to 7:00 a.m.

5. Complaints

The City of Tempe started registering aircraft noise complaints from Tempe residents in October 2000 after the opening of the third runway at Phoenix Sky Harbor International Airport. During February 2005, 6 residents filed 12 aircraft noise complaints with the City of Tempe. In addition to residents north of the Salt River reporting departure noise during early morning hours, complaints on smaller aircraft and frequent helicopter traffic were reported. Inquiry was made into a reported carrier deviation to the south of the riverbed. According to TRACON recordings the controller notified the pilots that aircraft was on a deviating departure heading. Suspected flight training activities at Stellar were also reported as contributing to the aircraft noise from smaller aircraft over south Tempe. Stellar Airpark has recently published a new advisory directive to mitigate noise from flight training activities.



Green flight tracks = Departures outside the Tempe Corridor
 Blue flight tracks = Departures inside the Tempe Corridor
 Turquoise flight tracks = Arrivals
 Address of resident that filed complaints = 